REMARKS

Present Status of the Application

The Office Action rejected all presently-pending claims 1, 3-4, 6-7, and 9-20. Specifically, the Office Action rejected claims 1, 3, 4, 6, 7, 9-11, 14, 15, 17 and 18 under 35 U.S.C. 103(a) as being unpatentable over Harries et al. (U. S. Patent 3,824,678) in view of Haight et al. (U. S. Patent 6,333,485). The Office Action also rejected claims 12, 13, 16, 19, and 20 as being unpatentable over Harries et al. in view of Haight et al. and further in view of Usami (U. S. Patent 6,440,773). Applicant has cancelled claims 4 and 6 and amended independent claim 1 to recite the features of claim 4. After entry of the amendment, claims 1, 3, 7, and 9-20 remain pending. Reconsideration of those claims is respectfully requested.

Summary of Applicant's Invention

The Applicant's invention is directed to using the ultrashort pulse laser to cut the substrate without using a dicer or an adhesive sheet. The ultrashort pulse laser having the pulse width of less than 1 picosecond is irradiated along scribed lines between two elements for cutting substrate. Also and, the ultrashort pulse laser emits a plurality of pulses having an interpulse separation of 3 to 30 picoseconds.

Discussion of Office Action Rejections

The Office Action rejected claims 1, 3, 4, 6, 7, 9-11, 14, 15, 17 and 18 under 35 U.S.C. 103(a), as being unpatentable over Harries et al. in view of Haight et al.. The Office Action also rejected claims 12, 13, 16, 19, and 20 under 35 U.S.C. 103(a), as being unpatentable over Harries

et al. in view of Haight et al. and further in view of Usami. Applicant respectfully traverses the rejections for at least the reasons set forth below.

Applicant has amended independent claim 1 to recite the features in claim 4.

The amended independent claim 1 recites *that "said ultrashort pulse laser emits a plurality of pulses having an interpulse separation of **3 to 30 picoseconds**".* In this particular range of separation, the swelling height can be significantly reduced as discussed in pages 18-19 and shown in Fig. 8 of the specification. This unique pulse separation of the present invention is not disclosed or suggested by the prior art references.

As shown in FIG. 8 of the specification of the present application, when the pulse separation time is set to be about 3-30 ps, the swelling height can be effectively reduced. In other words, an improved cutting result can be achieved by this operation condition of the present invention.

When considering the present invention as a whole, the pulse separation time of 3-30 ps has achieved unexpected results and made the present invention unobvious.

In re prior art references of Harries et al., Haight et al., and Usami, none of them teaches or even remotely suggests the relationship between the pulse separation time and the swelling height, let alone the specific pulse separation range of 3-30 ps.

In order to justify a combination of references such as is here suggested it is necessary not only that it be physically possible to combine them, but that the art should contain something to suggest the desirability of doing so. Ex parte Walker, 135 USPQ 195, 196 (PTO Bd. App. 1961).

The prior art itself may suggest the desirability of the combination, or the motivation may come from other sources. In re Clinton, 527 F.2d 1226, 188 USPQ 365 (CCPA 1976).

That suggestion must, however, be present regardless of how "minor" or "trivial" the differences are between the claimed invention and the prior art. Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 15 USPQ2d 1321 (Fed. Cir. 1990).

Moreover, the motivation must come from somewhere other than the applicant or patentee. In re Fricth, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992).

The cited references not only fail to teach or suggest the specific pulse separation time of the present invention, but also fail to teach or suggest the relationship between the pulse separation time and the swelling height. Therefore, they cannot render the present invention as defined in the amended claim 1 obvious.

For at least the foregoing reasons, Applicant respectfully submits that independent claim 1 patently defines over the prior art references, and should be allowed. For at least the same reasons, dependent claims 3, 7, and 9-20 patently define over the prior art references as well.

CONCLUSION

For at least the foregoing reasons, it is believed that all pending claims 1, 3, 7, and 9-20 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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